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**Datasheet for the decision**
**of 20 June 2012**

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| **Case Number:** | T 2009/11 - 3.5.04 |
| **Application Number:** | 07022122.1 |
| **Publication Number:** | 1887806 |
| **IPC:** | H04N7/50, H04N7/26, H04N7/36 |
| **Language of the proceedings:** | EN |

**Title of invention:**
Moving picture prediction system

**Applicant:**
MITSUBISHI DENKI KABUSHIKI KAISHA

**Relevant legal provisions:**
EPC 1973 Art. 76(1), 111(1)
EPC Art. 123(2)

**Keyword:**
Amendments - added subject-matter
Appeal decision - remittal to the department of first instance

**Beschwerdekammern**
**Boards of Appeal**
**Chambres de recours**

Case Number: **T 2009/11 - 3.5.04**

# D E C I S I O N
## of the Technical Board of Appeal 3.5.04
## of 20 June 2012

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| **Appellant:** (Applicant) | MITSUBISHI DENKI KABUSHIKI KAISHA 7-3, Marunouchi 2-chome Chiyoda-ku, Tokyo 100-8310 (JAPON) |
| **Representative:** | Pfenning, Meinig & Partner GbR Patent- und Rechtsanwälte Theresienhöhe 13 80339 München (ALLEMAGNE) |
| **Decision under appeal:** | Decision of the Examining Division of the European Patent Office posted 14 April 2011 refusing European patent application No. 07022122.1 pursuant to Article 97(2) EPC. |

**Composition of the Board:**

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| **Chairman:** | F. Edlinger |
| **Members:** | A. Dumont |
| | B. Müller |

**Summary of Facts and Submissions**

I.      The applicant appealed against the decision by the
        examining division refusing European patent application
        EP 07 022 122.1, which is a divisional application of
        EP 04 026 174.5 (in the following the "parent
        application"), which, in turn, is a divisional
        application of EP 98 900 693.7 (the "grandparent
        application").

II.     The examining division refused the present application
        on the ground that the subject-matter of the claims did
        not comply with Articles 76(1) EPC and 123(2) EPC.

III.    In an annex to the summons to oral proceedings, the
        board expressed its provisional agreement with the
        examining division's findings in the decision under
        appeal. It further observed that, since the examining
        division had not decided on inventive step, the case
        might be remitted to the first-instance department for
        further prosecution, should the reasons for refusing
        the application be overcome.

IV.     With a letter dated 21 May 2012, the appellant filed
        claim 1 of a main, first and second auxiliary request.

V.      Oral proceedings before the board took place on 20 June
        2012. The appellant filed claim 1 of a first auxiliary
        request during these oral proceedings, in reaction to a
        further objection raised by the board under
        Articles 76(1) EPC 1973 and 123(2) EPC.

VI.     The appellant requested that the decision under appeal
        be set aside and that a patent be granted on the basis
        of claim 1 of the main request filed with letter of
        21 May 2012, or of claim 1 of the first auxiliary

request submitted in the oral proceedings, or of
claim 1 of the second auxiliary request filed with
letter of 21 May 2012.

VII.  Claim 1 according to the main request reads as follows:

"A moving picture prediction method for predicting a
moving picture to be implemented in an encoder,
the moving picture prediction method comprising the
steps of:
receiving a parameter representing a motion between an
image to be predicted and one of a plurality of
reference pictures each stored in one of a plurality of
reference picture memories, a reference memory number
representing a reference picture memory to be used for
prediction, and information dynamically determining
code allocation to the reference memory number based on
frequency in use of the respective memories for
prediction, and
generating a predicted image by using the reference
picture memory to be used for prediction."

VIII. Claim 1 according to the first auxiliary request reads
as follows:

"A moving picture prediction and encoding method for
predicting a moving picture to be implemented in an
encoder including a plurality of reference picture
memories for storing picture data of a plurality of
reference pictures to be used for prediction, the
moving picture prediction and encoding method
comprising the steps of:
receiving a parameter representing a motion of a
picture segment to be predicted and a reference memory
number representing a reference picture memory to be
used for prediction,

generating a predicted picture based upon the parameter
by using the picture data of the reference picture
memory to be used for prediction,
dynamically determining code allocation to the
reference memory number based on information about
frequency in use of the respective memories for
prediction and encoding the reference memory number
according to the code allocation."

IX.     The reasoning in the decision under appeal, in so far
        as it is relevant for the board's decision, may be
        summarised as follows.

        The claims are directed to embodiment 11 described on
        pages 66 to 68, where reference memories are ranked
        based upon frequency in use for prediction, with ranks
        being updated dynamically during an encoding operation
        and the code allocation to a reference memory number
        being based upon the ranks of the respective memories
        used for prediction. Thus, a memory which is frequently
        used for prediction is allocated a short code to
        enhance coding efficiency (page 67, lines 15 to 19).
        The claims do not correspond directly to those of the
        grandparent application as filed. A generalisation
        beyond the concept of a dynamic ranking according to
        frequency in use constitutes added subject-matter,
        infringing both Articles 76(1) and 123(2) EPC.

X.      The further objection by the board in the oral
        proceedings may be summarised as follows.

        Embodiment 11 discloses an encoder, in which a
        prediction section receives two parameters (a motion
        parameter 4 and a reference memory indicator signal 25)
        and outputs a ranking information signal (90) to a
        distinct prediction information encoder (91). A moving

picture prediction method comprising the step of
receiving a parameter representing a motion, a
reference memory number and (as a third input signal)
information dynamically determining code allocation
based on frequency in use thus extends beyond the
content of the application documents as originally
filed.

XI.     The appellant's arguments may be summarised as follows.

        The amendments to the claims overcome the objections in
        the decision under appeal and in the summons to oral
        proceedings before the board.

        Claim 1 of the main request should be interpreted as
        relating to a method in which three pieces of
        information ("parameter representing a motion"
        "reference memory number" and "information dynamically
        determining code allocation") are received for
        prediction. The latter information corresponds to the
        ranking information (90) received by an encoder (91) as
        shown in figure 19. In the context of the present
        application, the disclosure of the claimed method
        should be understood broadly as also receiving the
        ranking information in the receiving step, although
        this step is carried out in an encoder (91) which, in
        figure 19, is distinct from the prediction section
        which receives the other pieces of information.

**Reasons for the Decision**

1.      The appeal is admissible.

2.      Main request

2.1    According to the description (page 26, lines 8 to 23),
       an encoder comprises several distinct sections, in
       particular a memory area comprising a plurality of
       reference picture memories (16, 17, 18 in figures 1 and
       19), a prediction picture generation section which
       implements a prediction system, and a variable-length
       encoder/multiplexer (19 in figures 1 and 19).

2.2    It is common ground that the "parameter representing a
       motion", the "reference memory number" and the
       "information dynamically determining code allocation to
       the reference memory number" according to claim 1
       respectively correspond to the motion parameter (4),
       the reference memory indicator signal (25) and the
       ranking information (90) disclosed in embodiment 11 and
       shown in figure 19.

2.3    It is further common ground that the ranking
       information (90) is output by the memory update
       unit (15b; included in the prediction section) and
       received in the prediction information encoder (91)
       included in the distinct variable-length encoder/
       multiplexer (19), for encoding and insertion into the
       outgoing bit stream (21). Hence, in the board's view,
       the ranking information (90) is a result ("resultant
       ranking information 90" on page 67, lines 3 and 4) of
       the prediction method, rather than a piece of
       information received and used for prediction in the
       encoder.

2.4    The application as filed does not generally disclose a
       step of receiving the ranking information in the method
       for predicting a moving picture implemented in an
       encoder. Taking into account his general knowledge, a
       skilled person would distinguish between picture
       prediction and (variable-length) encoding of side-

information such as ranking information within an
encoder.

2.5     As a result, the step of claim 1 consisting in
        receiving, in a moving picture prediction method
        implemented in an encoder, information dynamically
        determining code allocation to the reference memory
        number based on frequency in use of the respective
        memories for prediction is not disclosed in the
        application documents as originally filed.

2.6     Amended claim 1 of the main request thus infringes
        Article 123(2) EPC, and the main request is not
        allowable.

3.      First auxiliary request

3.1     The description in the present application is identical
        to the description in both the parent and the
        grandparent applications, whereas the claims as
        originally filed in these three applications are
        substantially different and non-overlapping.

3.2     The examining division objected to the generalisation
        beyond the concept of a dynamic ranking according to
        frequency in use, as described in relation to
        embodiment 11. Amended claim 1 according to the first
        auxiliary request states that code allocation to the
        reference memory number is dynamically determined based
        on information about frequency in use of the respective
        memories for prediction, and that the reference memory
        number is encoded according to the code allocation.
        This is disclosed in relation to embodiment 11, where
        memories are ranked based upon frequency in use, or
        synonymously based upon memory use count, and where the

memory number is encoded, or allocated a code, based
upon the ranks (see page 66, lines 11 to 23).

3.3    The description (page 19, lines 9 to 18) further
       discloses that the code length is based on the rank of
       a memory, which is based in turn on the number of times
       it is used. Code allocation is thus not necessarily
       limited to allocating a short code to a high-rank,
       frequently-used memory as disclosed on page 67,
       lines 15 to 19.

3.4    As a result, claim 1 according to the first auxiliary
       request overcomes the objection of added subject-matter
       in the decision under appeal.

3.5    Claim 1 according to the first auxiliary request
       relates to a prediction and encoding method, the method
       comprising the step of receiving a parameter
       representing a motion and a reference memory number
       representing a reference picture memory to be used for
       prediction. This is disclosed in the description, where
       these two pieces of information (4, 25) are received
       for prediction.

3.6    The step of receiving, in a prediction method,
       information dynamically determining code allocation to
       a reference memory number, found above to constitute
       added subject-matter, has been deleted. Instead,
       claim 1 according to the first auxiliary request states
       that information about frequency in use of the
       respective memories is used for determining code
       allocation and encoding the reference memory number
       according to the code allocation based on the frequency
       in use. This is disclosed in the description (see
       sections 3.2 and 3.3 above).

3.7     As a result, claim 1 according to the first auxiliary
        request also overcomes the objection raised against
        claim 1 of the main request.

3.8     In conclusion, the amendments to claim 1 of the first
        auxiliary request are directly and unambiguously
        disclosed in the description (and figures) of the
        present application as filed, and consequently also in
        the identical descriptions of the parent and
        grandparent applications. As a result, the subject-
        matter of amended claim 1 does not extend beyond the
        content of the present application as filed, or beyond
        the content of the earlier applications, so that
        Articles 76(1) EPC 1973 and 123(2) EPC are complied
        with.

4.      Remittal to the first instance

        The examining division has not carried out a complete
        examination of the application, in particular as to
        novelty and inventive step. In view of this the board
        exercises its discretion in accordance with
        Article 111(1) EPC 1973 in remitting the case to the
        first instance for further prosecution.

**Order**

**For these reasons it is decided that:**

1.  The decision under appeal is set aside.

2.  The case is remitted to the first instance for further
    prosecution.


The Registrar:                                      The Chairman:

K. Boelicke                                         F. Edlinger


Decision electronically authenticated